

**Notice of Allowability**

Application No.

09/594,652

Examiner

Susanna M. Diaz

Applicant(s)

IYER ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Examiner's Amendment agreed to on May 19, 2006.
2. ☒ The allowed claim(s) is/are 1-5,7-11,13-25,27-40 and 42-47.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
- ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
- ☒ Examiner's Amendment/Comment
- ☒ Examiner's Statement of Reasons for Allowance
- ☐ Other \_\_\_\_\_

*Susanna Diaz*  
SUSANNA M. DIAZ  
PRIMARY EXAMINER  
AU 3623

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Brian Harris (Reg. No. 48,383) on May 23, 2006.

The application has been amended as follows:

*Please cancel claims 12, 26, and 41.*

*Please amend claims 1, 5, and 33 as follows:*

Claim 1. (Currently Amended) A computer-implemented system for offering to a user one or more alternative products similar to a requested product, comprising:

a computer-implemented first user interface operable to receive a user request for a product having a plurality of product attributes, the user request specifying a desired attribute value for each of a plurality of selected product attributes;

a computer-implemented search procedure operable to select a set of one or more candidate alternative products having attribute values consistent with the desired attribute values specified in the user request for the selected product attributes, for each potential alternative product in a set of potential alternative products the search procedure operable to:

for each selected product attribute, compare the desired attribute value

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specified in the user request with the attribute value for the potential alternative product to determine an attribute similarity value for the selected product attribute for the potential alternative product; and

determine a product similarity value for the potential alternative product according to the attribute similarity values, each attribute similarity value having been determined for a selected product attribute for which a desired attribute value is specified in the user request by comparing the desired attribute value specified in the user request with the attribute value for the potential alternative product;

the set of one or more candidate alternative products being selected according to the product similarity values for the potential alternative products, each product similarity value having been determined according to the attribute similarity values determined for each selected product attribute for which a desired attribute value is specified in the user request;

a computer-implemented sort procedure operable to rank the one or more candidate alternative products in order of decreasing similarity to the requested product determined according to the product similarity values for the one or more candidate alternative products, each product similarity value having been determined according to the attribute similarity values determined for each selected product attribute for which a desired attribute value is specified in the user request; and

a computer-implemented second user interface operable to present the set of one or more candidate alternative products to the user for selection of a candidate alternative product,

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wherein each attribute similarity value is calculated according to either a first expression or a second expression depending on whether the attribute value for the potential alternative product is less than or greater than the desired attribute value for the requested product, [.]

wherein each attribute similarity value ASV for a selected product attribute is calculated as follows:

if the attribute value x for the potential alternative product is less than the desired attribute value  $A_r$  for the requested product,

$$ASV = \frac{x^2 - A_{min}^2}{A_r^2 - A_{min}^2}$$

where  $A_{min}$  is a minimum attribute value for the selected product attribute across all potential alternative products; and

if the attribute value x for the potential alternative product is greater than the desired attribute value  $A_r$  for the requested product,

$$ASV = \frac{x^2 - A_{max}^2}{A_r^2 - A_{max}^2}$$

where  $A_{max}$  is a maximum attribute value for the selected product attribute across all potential alternative products.

Claim 5. (Currently Amended) A computer-implemented method for offering to a user one or more alternative products similar to a requested product, the method being performed using one or more processing units, the method comprising:

using one or more processing units, receiving from the user a request for a

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preferred product having a plurality of product attributes, the user request specifying a desired attribute value for each of a plurality of selected product attributes;

using one or more processing units, selecting a set of one or more candidate alternative products having attributes consistent with the desired attribute values specified in the user request for the selected product attributes, comprising for each potential alternative product in a set of potential alternative products:

comparing, for each selected product attribute, the desired attribute value specified in the user request with the attribute value for the potential alternative product to determine an attribute similarity value for the selected product attribute for the potential alternative product; and

determining a product similarity value for the potential alternative product according to the attribute similarity values, each attribute similarity value having been determined for a selected product attribute for which a desired attribute value is specified in the user request by comparing the desired attribute value specified in the user request with the attribute value for the potential alternative product;

the set of one or more candidate alternative products being selected according to the product similarity values for the potential alternative products, each product similarity value having been determined according to the attribute similarity values determined for each selected product attribute for which a desired attribute value is specified in the user request;

using one or more processing units, rank ordering the one or more candidate alternative products according to their degree of similarity with the preferred product

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determined according to the product similarity values for the one or more candidate alternative products, each product similarity value having been determined according to the attribute similarity values determined for each selected product attribute for which a desired attribute value is specified in the user request; and

using one or more processing units, presenting to the user the set of one or more candidate alternative products for selection of a candidate alternative product,

wherein each attribute similarity value is calculated according to either a first expression or a second expression depending on whether the attribute value for the potential alternative product is less than or greater than the desired attribute value for the requested product<sub>i</sub> [.]

wherein each attribute similarity value ASV for a selected product attribute is calculated as follows:

if the attribute value x for the potential alternative product is less than the desired attribute value  $A_r$  for the requested product,

$$ASV = \frac{x^2 - A_{\min}^2}{A_r^2 - A_{\min}^2}$$

where  $A_{\min}$  is a minimum attribute value for the selected product attribute across all potential alternative products; and

if the attribute value x for the potential alternative product is greater than the desired attribute value  $A_r$  for the requested product,

$$ASV = \frac{x^2 - A_{\max}^2}{A_r^2 - A_{\max}^2}$$

where  $A_{max}$  is a maximum attribute value for the selected product attribute across all potential alternative products.

Claim 33. (Currently Amended) Software for offering to a user one or more alternative products similar to a requested product, the software embodied in computer-readable media and when executed operable to:

receive from the user a request for a preferred product having a plurality of product attributes, the user request specifying a desired attribute value for each of a plurality of selected product attributes;

select a set of one or more candidate alternative products having attributes consistent with the desired attribute values specified in the user request for the plurality of selected product attributes, comprising for each potential alternative product in a set of potential alternative products:

comparing, for each selected product attribute, the desired attribute value specified in the user request with the attribute value for the potential alternative product to determine an attribute similarity value for the selected product attribute for the potential alternative product; and

determining a product similarity value for the potential alternative product according to the attribute similarity values, each attribute similarity value having been determined for a selected product attribute for which a desired attribute value is specified in the user request by comparing the desired attribute value specified in the user request with the attribute value for the potential alternative product;

the set of one or more candidate alternative products being selected according to the product similarity values for the potential alternative products, each product similarity value having been determined according to the attribute similarity values determined for each selected product attribute for which a desired attribute value is specified in the user request;

rank order the one or more candidate alternative products according to their degree of similarity with the preferred product determined according to the product similarity values for the one or more candidate alternative products, each product similarity value having been determined according to the attribute similarity values determined for each selected product attribute for which a desired attribute value is specified in the user request; and

present to the user the set of one or more candidate alternative products for selection of a candidate alternative product,

wherein each attribute similarity value is calculated according to either a first expression or a second expression depending on whether the attribute value for the potential alternative product is less than or greater than the desired attribute value for the requested product, [.]

wherein each attribute similarity value ASV for a selected product attribute is calculated as follows:

if the attribute value  $x$  for the potential alternative product is less than the desired attribute value  $A_r$  for the requested product,



$$ASV = \frac{x^2 - A_{min}^2}{A_r^2 - A_{min}^2}$$

where  $A_{min}$  is a minimum attribute value for the selected product attribute across all potential alternative products; and

if the attribute value  $x$  for the potential alternative product is greater than the desired attribute value  $A_r$  for the requested product,

$$ASV = \frac{x^2 - A_{max}^2}{A_r^2 - A_{max}^2}$$

where  $A_{max}$  is a maximum attribute value for the selected product attribute across all potential alternative products.

### ***Reasons for Allowance***

2. Claims 1-5, 7-11, 13-25, 27-40, and 42-47 are allowed.

3. The following is an examiner's statement of reasons for allowance:

Iyer et al. ("Automated Retrieval and Ranking of Similar Parts in Agile Manufacturing") discloses the ranking of various parts as suitable substitute parts in an agile manufacturing environment. The substitute parts are identified and ranked based on desired characteristics and a similarity measure. Iyer, however, fails to teach or suggest the specific equations recited in claims 1-5, 7-11, 13-25, 27-40, and 42-47. More specifically, Iyer does not disclose or suggest the calculation of each attribute similarity value ASV for a selected product attribute, wherein each attribute similarity value ASV for a selected product attribute is calculated as follows:

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if the attribute value  $x$  for the potential alternative product is less than the desired attribute value  $A_r$  for the requested product,

$$ASV = \frac{x^2 - A_{\min}^2}{A_r^2 - A_{\min}^2}$$

where  $A_{\min}$  is a minimum attribute value for the selected product attribute across all potential alternative products; and

if the attribute value  $x$  for the potential alternative product is greater than the desired attribute value  $A_r$  for the requested product,

$$ASV = \frac{x^2 - A_{\max}^2}{A_r^2 - A_{\max}^2}$$

where  $A_{\max}$  is a maximum attribute value for the selected product attribute across all potential alternative products.

Therefore, claims 1-5, 7-11, 13-25, 27-40, and 42-47 are deemed to be allowable over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### **Conclusion**

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Schmitt (U.S. Patent No. 5,983,220) -- Discloses a decision support system that determines the utility value of various attributes of an item.

Stratmann (U.S. Patent No. 5,717,865) -- Discloses a method for assisting individuals in a decision making process by ranking choices based on various decision components.

Murphy et al. (U.S. Patent No. 6,529,877) -- Discloses an equipment allocation system that ranks the most suitable equipment by cost, complexity, availability, etc.

Maxwell (U.S. Patent No. 6,195,643) -- Discloses an evaluation and decision making system that identifies products that best meet a customer's desired product functionality.

Straub et al. (U.S. Patent No. 6,035,284) -- Discloses a system and method for identifying suitable substitutes for a product.

Wyner ("Rethinking Product Development") -- Discloses the use of trade-off analysis in product development.

Wyner ("Trade-off Analysis and Strategy Development") -- Discloses the use of trade-off analysis in marketing strategy development.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susanna M. Diaz whose telephone number is (571) 272-6733. The examiner can normally be reached on Monday-Friday, 10 am - 6 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Susanna M. Diaz  
Primary Examiner  
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May 25, 2006